Genetic differences found between adult cell and embryonic-derived stem cells

Posted: July 2, 2009

Created: 02/07/2009 - 12:10

Researchers at the University of California, Los Angeles have found genetic differences that distinguish induced pluripotent stem (iPS) cells from embryonic stem cells. These differences diminish over time, but never disappear entirely. iPS cells are created when adult cells, such as those from the skin, are reprogrammed to look and behave like embryonic stem cells. But until now, scientists didn't know if the two types of stem cells were actually identical at a molecular level. This latest research shows that iPS and embryonic stem cells differ in which genes they have turned on or off. All early iPS cells share these genetic traits, regardless of what animal they come from, the type of adult cells the iPS cells start as, or what method was used to reprogram those adult cells. However, later cultures of iPS cells show that most, but not all, of these differences disappear over time, making later cultures of iPS cells more similar to embryonic stem cells. If scientists want to use iPS cells in medical therapies, this research will give them a better idea of how similar they are to embryonic stem cells.

Cell Stem Cell: July 2, 2009
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Related Information: Press Release, University of California, Los Angeles

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